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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/776,794	02/04/2001	Huy Thatminh Ton	84813	1595

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EXAMINER
TANG, KENNETH

ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/776,794	TON ET AL.
	Examiner	Art Unit
	Kenneth Tang	2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _02 March 2006_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-3,10,25 and 34-41_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-3,10,25 and 34-40_ is/are rejected.

7)☒ Claim(s) _41_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the Amendment filed on 3/2/06. Applicant's arguments have

been fully considered but are not found to be persuasive.

2.   Claims 1, 3-10, 25, 34-41 are presented for examination.

Allowable Subject Matter

3.   Claim 41 is objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and

any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   **Claims 1 and 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Perks (US 6,532,487 B1) in view of Buckler et al. (hereinafter Buckler) (US 5,050,088).

5.   As to claim 1, Perks teaches a method for dynamic allocation and management of

semaphores for accessing shared resources, the method comprising:

maintaining a data structure indicating for each of a plurality of resources an allocated

semaphore *(col. 2, lines 54-56, col. 4, lines 35-36, col. 6, lines 4-6)*;

receiving a request to access a first resource from a first task *(col. 4, lines 57-60)*;

6.   · Perks teaches allocating a semaphore in response to determining when the resource is

available and updating *(Fig. 4, item 48, etc.)* the data structure with indications of the first

resource but fails to explicitly teach signaling to the first task that the first resource is available.

However, Buckler teaches having a "signal semaphore" to indicate when a resource is available

(unlocked) *(col. 21, lines27-49)*. It would have been obvious to one of ordinary skill in the art at

the time the invention was made to combine Buckler and Perks because this would simplify the

use of semaphore facilities *(col. 21, lines9-11, etc.)*.

7.   ˙ As to claim 3, Perks teaches wherein maintaining a current access type for each of the

plurality of resources *(col. 1, lines 25-34)*.

8.   As to claim 4, Buckler teaches wherein said determining that the first resource is

available includes finding an indication of the first resource and an associated current access type

of read in the data structure (locked/unavailable, unlocked/available and "signal semaphore") and

recognizing that the request corresponds to a read request *(col. 21, lines 27-50)*.

9.   As to claim 5, Buckler teaches receiving a second request to access the first resource

from a second task; referencing the data structure to determine that the first resource is currently

not available, and signaling to the second task that the first resource is not available (signal

semaphore) *(col. 21, lines 27-50, etc.)*.

10.   As to claim 6, Buckler teaches comprising receiving a second request to access the first

resource from a second task; referencing the data structure to determine that the first resource is

currently read-locked (unavailable), recognizing that the second request corresponds to a read

access request; and signaling (signal semaphore) to the second task that the first resource is

available *(col. 21, lines 27-50, etc.).*

11.   As to claim 7, Buckler teaches receiving a second request to access the first resource

from a second task; referencing the data structure to determine that the first resource is currently

read-locked, recognizing that the second request corresponds to a write access request; and

signaling ("signal semaphore") to the second task that the first resource is not available *(col. 21,*

lines 27-50, etc.).

12.   As to claim 8, Buckler teaches receiving a second request to access the first resource

from a second task; referencing the data structure to determine that the data structure to

determine that the first resource is currently write-locked (unavailable), and signaling to the

second task that the first resource is not available ("signal semaphore")*(col. 21, lines 27-50, etc.).*

13.   As to claim 9, Perks teaches receiving a second request to access the first resource from a

second task, the second request, including a request timeout value *(col. 4, lines 57-60)*; George

teaches referencing the data structure to determine that the first resource is currently not

available, queuing the second request, the first task releasing the first resource within a

timeframe corresponding to the timeout value, and signaling to the second task that the first

resource is available *(see Abstract and col. 2, lines 58-68, col. 3, lines 1-9, and claim 2)*.

14.   As to claim 10, Perks teaches receiving a second request to access the first resource from

a second task, the second request, including a request timeout value *(col. 4, lines 57-60)*;

referencing the data structure to determine that the first resource is currently not available,

queuing the second request, expiring the second request based on the timeout value, and

signaling to the second task that the first resource is not available *(col. 63, lines 64-68, col. 64,*

lines 1-8 and 64-68, and col. 65, lines 1-8).

15.   **Claims 25 and 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Buckler et al. (hereinafter Buckler) (US 5,050,088) in view of Poublan et al. (hereinafter

Poublan) (US 4,104,718).

16.   As to claim 36, Buckler teaches a computer-implemented method for dynamic allocation

and management of semaphores for accessing shared resources, the method comprising:

      · maintaining a resource lock table data structure indicating for each of a plurality of

resources an allocated semaphore of a plurality of semaphores;

      maintaining a semaphore allocation table data structure indicating the currently used

semaphores for said resources of a plurality of semaphores; and

in response to a received resource active read request for a particular resource from a first

task, locating an indication for a particular resource is currently read locked (locked or

unavailable) using a first semaphore *(col. 21, lines 27-49)*; and in response: getting a second

semaphore from a pool of free semaphores (semaphore pool) (col. 22, lines 38-60), updating a

semaphore to reflect that the particular resource is associated with the second semaphore in

addition to the first semaphore, updating to reflect an additional read lock associated with the

particular resource (returns the semaphore identifier back to the pool by appending it to the tail

of the message queue) (col. 22, lines 37-60), and signaling to the first task that the particular

resource is available (signal semaphore) *(col. 21, line 34)*.

17.   Buckler fails to explicitly teach using two table data structures such as a resource lock

table data structure indicating for each of a plurality of resources an allocated semaphore and a

semaphore allocation table data structure indicating the currently used semaphores. However,

Poublan teaches having a Resource Load Table with an allocated semaphore of a plurality of

semaphores as well as a Job Occurrence Table for currently used semaphores of a plurality of

semaphores (col. 33, lines 60-68, col. 34, lines 59-68, col. 35, lines 1-8, etc.). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to combine

Poublan and Buckler because having data tables would increase the control for allocation (col.

47, lines 20-46, col. 33, lines 60-68, col. 34, lines 59-68, col. 35, lines 1-8, etc.).

18.   As to claim 37, it is rejected for the same reasons as stated in the rejection of claim 36.

19.   As to claim 38, Buckler teaches wherein the received resource requests is for read access

to the particular resource; and the method further comprises updating the particular entry in the

resource lock table structure to reflect an additional read lock associated with the particular

resource (returns the semaphore identifier back to the pool by appending it to the tail of the

message queue) (col. 22, lines 37-60).

20.   As to claim 39, Buckler teaches where the second semaphore is associated with a timeout

value; and wherein said signaling includes signaling to the first task that the particular resource is

available before the end of a timeout period corresponding to the timeout value *(col. 21, lines 7-*

19, col. 16, line 15, col. 20, lines 30-31).

21.   As to claim 40, Buckler teaches where the second semaphore is associated with a timeout

value; and wherein the method further comprises: in response to the end of a timeout period

corresponding to the timeout value *(col. 21, lines 7-19, col. 16, line 15, col. 20, lines 30-31)*:

returning the second semaphore to the pool of free semaphores (semaphore pool) (col. 22, lines

38-60), updating the semaphore entry in the semaphore allocation table to reflect that the

particular resource is no longer associated with the second semaphore (returns the semaphore

identifier back to the pool by appending it to the tail of the message queue) (col. 22, lines 37-60),

and signaling to the first task that the particular resource is not available (signal semaphore) *(col.*

21, line 34).

22.   As to claims 25, it is rejected for the same reasons as stated in the rejections of claim 1.

In addition, Buckler teaches a means for checking/determining that the first resource is available

(unlocked) (col. 21, lines 27-50, etc.).

23.   As to claim 34, Buckler teaches including a means for freeing (unlocking) the first

semaphore *(col. 21, lines27-50)*.

24.   As to claim 35, Buckler teaches wherein the first semaphore is associated with a timeout

value; wherein said means for freeing the first semaphore includes being responsive to a timeout

of the first semaphore based on the timeout value *(col. 21, lines 7-19, col. 16, line 15, col. 20,*

lines 30-31).

Response to Arguments

25.   During patent examination, the pending claims must be "given their broadest reasonable

interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d

1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during

prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once

issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05,

162 USPQ 541, 550-51 (CCPA 1969).

26.   Applicant argues that the references do not teach that both the first resource and the first
semaphore are updated.

In response, the Examiner respectfully disagrees. Perks *(Fig. 4, item 48, etc.)* teaches

updating the first resource, while Buckler *(col. 21, lines27-49)* teaches updating the first

semaphore.

27.   *Applicant argues that Perks teaches away from the claimed limitation as it teaches the use of index numbers assigned to each class for indexing into the semaphore mapping table, and therefore, it would not update these indexes.*

In response, Perks does not teach away. For a reference to teach away, it has to show that

the limitation is specifically not possible to occur. Applicant's arguments are not found to be

persuasive.

28.   *Applicant argues that the references do not teach "in response", "determining whether or not the first resource is available", "said determining whether or not the first resource is available", "said determining whether or not the first resource is available includes checking the data structure for an indication of the first resource".*

In response, Applicant merely states that the action does not teach the limitations above

but fails to give any support for their argument. Perks teaches allocating a semaphore in

response to determining when the resource is available and updating *(Fig. 4, item 48, etc.)* the

data structure with indications of the first resource but fails to explicitly teach signaling to the

first task that the first resource is available. However, Buckler teaches having a "signal

semaphore" to indicate when a resource is available (unlocked) *(col. 21, lines27-49)*. It would

have been obvious to one of ordinary skill in the art at the time the invention was made to

combine Buckler and Perks because this would simplify the use of semaphore facilities *(col. 21,

lines9-11, etc.)*.

29.   Applicant argues that "determining whether or not the first resource is available includes checking the data structure for an indication of the first resource" is not based on the status of a semaphore.

In Buckler, the checking of the data structure for an indication of the first resource is based on the semaphore status of "signal semaphore". The other semaphore status is "wait on semaphore" *(col. 21, lines 27-49).*

30.   Applicant argues that the motivation is not proper for the combination of Perks and Buckler because it requires a "specific understanding or principle within the knowledge of the skilled artisan".

Perks and Buckler are both in the same field of endeavor of dynamic semaphore management.

31.   Applicant argues that claim 25 is rejected for the same reasons as stated for the rejection of claim 1 but the claims were rejected under a different combination of references.

The teaching in Buckler alone discloses the claimed limitation of 25 and Buckler is common to both claims 1 and 25.

32.   In response to applicant's arguments (on page 13) against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

33.   Applicant argues that the "signal semaphore" cited in the Office Action does not teach signaling the first task as it does not provide a signal to a process, rather the "signal semaphore" is called by a resource when it becomes available while being locked.

The signal semaphore provides a signal to the process as to whether the resource is to be locked or unlocked *(col. 21, lines 27-49).*

34.   Applicant argues that the Job Occurrence Table in Poublan contains information about jobs and not about semaphores.

The claimed language does not exclude jobs from being in the table. In Poublan, a semaphore is associated with the table (col. 33, lines 60-68, col. 34, lines 59-68, col. 35, lines 1-8, etc.).

35.   Applicant argues that the motivation is not proper for the combination of Poublan and Buckler because it requires a "specific understanding or principle within the knowledge of the skilled artisan".

Poublan and Buckler are in the same field of endeavor of computer systems capable of using data structures.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

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SUPERVISORY PATENT EXAMINER